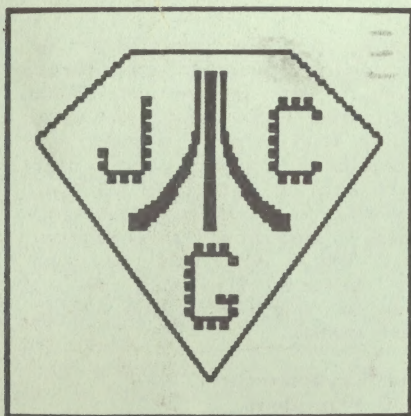




JACG TACE

NEWSLETTER
Vol. 4 No. 4

Dec. 1984

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THE JERSEY ATARI COMPUTER GROUP

884-1642

JACG HOTLINE

884-1642

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From the Editor's Desk...

Once again that time of the year is suddenly upon us. The holiday season seems to just magically appear out of nowhere. It immerses us in a feeling of warmth, of anticipating the joys we will soon be sharing with those we love and cherish. The sounds of carols and the bite of the fresh December wind conjure up images of a youth when things seemed simpler and easier. The promise of the computer is to return a small part of that sweet freedom which seems to have been sacrificed to the dependent complexity of life today.

May you have a happy and fulfilling holiday season and let your coming year be filled with joy and peace.

Frank Pazel
Editor-in-Chief, JACG Newsletter



SEASONS GREETINGS TO ALL!

MARK YOUR CALENDARS!!

JACG Meeting Schedule

January 12, 1985
February 9, 1985
March 9, 1985

From the Conn.....

For the last two years or so, Dick Kushner, founder and first president of JACG, wrote a monthly column in the newsletter entitled "A Word From the President". As president of JACG, I am continuing this column. But since you may have noticed a different heading at the top of this column and in my first President's column in last month's newsletter a few words may be in order regarding its name.

The word "conn" as in conning tower or conning station refers to the place from which a commander runs his or her ship. For you Star Trek fans, think of the bridge of the U.S.S. Enterprise. Captain Kirk sits in this chair (the Conn) and is surrounded by his officers who carry out his orders and run the mighty starship.

JACG is much like Star Trek, Captain Kirk and the Enterprise. No, we don't travel at warp 10 or encounter Klingons at our monthly meetings. But we do have a set of talented and dedicated officers that carry out the duties of running the organization. Take a moment to read the back cover of this newsletter and look at the names of our officers. The next time you see them at a meeting, why not go up to one or more and say "thanks for your continuing efforts". You might also say "Hey, how can I help...I want to get involved".

Unlike James T. Kirk, I do not give orders. Instead I rely upon the officers to perform their duties and try to coordinate things. At the November meeting, I attempted to "coordinate" the solicitation of volunteers to help with the various club activities. For the most part, I was surprised and encouraged by the number of people who volunteered to contribute at the meeting. Therefore, I would like to recognize them here and thank them for stepping forward.

Thanks go to: Joseph Kazimer and Helen Kilgallon for helping with the disk library; Mike Murphy for putting JACG posters in stores (Mike was also responsible for the successful JACG T-Shirt effort); Jerry Frese for keeping track of new software for the newsletter; and Dennis Hoskins for compiling the by-laws. We all appreciate your help.

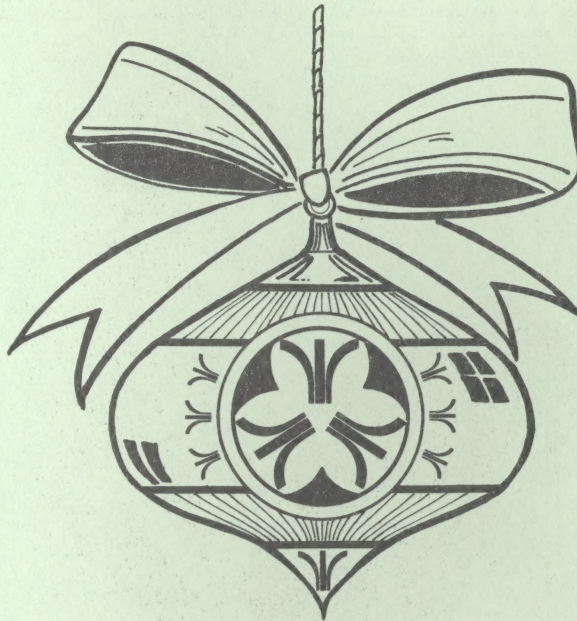
We still need volunteers to help with the opening and closing of the monthly meeting. Vince Murphy and Herb Lehner have been doing a fine job taking care of the details for our excellent monthly meeting facilities, but they have been doing this for as long as I can remember. Ideally, we need someone who IS a Bell Labs employee at Murray Hill to take over for Vince. The duties include obtaining and returning the key to the equipment room, calling the guard in the morning to open up the auditorium and setting up the equipment.

We also need one or two people to help, before and after the meetings, setting up and putting away the equipment. These people do NOT have to be Bell Labs employees. If you are willing to give a little to JACG instead of simply taking, please contact me. We all need your help.

By now you should be aware that the JACG Hotline is in full operation. Call 884-1642 for all the latest information about the world of Atari computing and JACG. If you have not yet called, give it a try. I am most interested in your feedback on how I can improve this service of JACG.

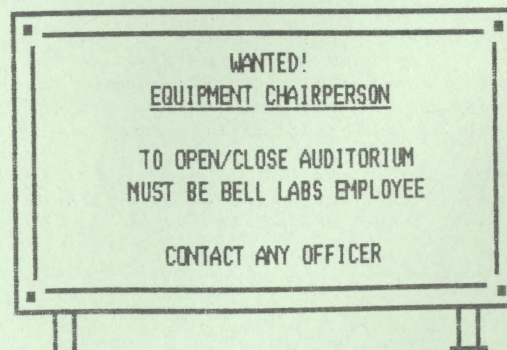
Finally, elsewhere in this newsletter is information about the first major press release issued by Atari Corp. With prices of 800XL computers approaching the \$100 level and disks drives less than twice that, there should be a lot of Atari computers under the 1984 Christmas tree. With Atari's attitude of "fast food computing" (remember-- you heard it here first) (no manuals, technical information, aftermarket support, etc.) JACG will be more important than ever before. I predict we will see a dramatic rise in our membership. Stay tuned.....see you next month.

Arthur Leyenberger
JACG President



Happy Holidays!

Logo Art by
Frank Pazel/JACG



Getting Down to **BASICs** by Richard Kushner-JACG

Well, I was not exactly overwhelmed with responses to my challenge of two months ago to modify the SINESCAPE program to make it work in other graphics modes. In fact, I was quite disappointed. So, I am going to put off going back to this interesting program for awhile and hope that some response is forthcoming from among the membership. The one response I got was from a member in COSTA RICA!! What about all of you New Jerseyites!!!! As a test of whether or not anyone at all even bothers to read this column, let me know if you even read this far into the column!

In any event, we will digress this month to present a program that prints very nice labels of the contents of your disks. More than a year ago, I published such a program in this newsletter. It used the very small, but very legible superscript font of the Epson printers to print many names per label, so you could have a catalog of each disk's contents taped on the disk folder. I mentioned that it would be nice to be able to have an alphabetized listing. Well, Gordon Banks, from the Huntsville, Alabama group, went right to work and not only added the ability to alphabetize the program names, but also the ability to print 2,3,4,5 or 6 across to make use of all possible label widths, or to just print each disk's contents on a piece of paper. The full listing of this program is below. A few comments are in order. The DATA statements in lines 490-530 are for the machine language sorting routing to alphabetize the program names. It is called by the **USR** command in line 240. Note also the graphics characters which appear in lines 210, 350, 390, 400, 410 and 420. Refer to your Atari reference manual or a good book (such as Basic Atari BASIC) to show which keys to press to get these symbols. Also note the "down arrows" in a number of lines. These are obtained by pressing the following sequence: **ESC**, then **CTRL** and **=** together. This program should work with all Epson printers and any that are "Epson compatible".

Enjoy this program. I think you will find it quite useful.

```

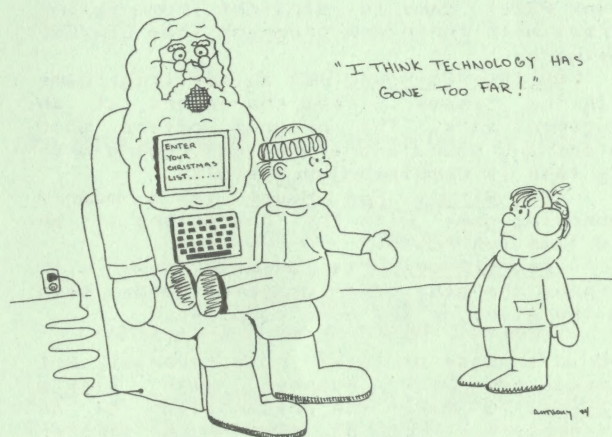
10 REM *****
20 REM *
30 REM *   DISK LISTING PROGRAM   *
40 REM *       by               *
50 REM *   DICK KUSHNER         *
60 REM *       and              *
70 REM *   GORDON BANKS        *
80 REM *
90 REM *****
100 DIM B$(17),N$(40),F$(900),S$(16),F
B$(12000):X=1:O=X-X:P=7:FB$="":POKE 82
2:GOSUB 470
110 GOSUB 350:?"1. Load printer with
labels or paper."
120:?"2. Turn on printer and interfa
ce."
130:?"3. Insert diskette into Drive
1."
140 POKE 752,X:?"4.Press RETURN when
ready":INPUT NS:?"
150 TRAP 150:GOSUB 350:?"PRINT HOW MA
NY COLUMNS?"?"4>Select 2 to 3 for 3.
5 in. labels."
160:?"5>Select 2 to 4 for 5 in. labels
":?"6>Select 1 to 6 columns for paper
.":

```

```

170:?"4+HOW MANY COLUMNS (1 to 6)":I
INPUT COL:IF COL<X OR COL>6 THEN 150
180 GOSUB 350:?"Do you want the fi
les printed?"?"1.alphabetically (Y/
N)":INPUT NS:IF NS="1" THEN 180
190 IF NS(X,X)="Y" THEN SORT=X:GOTO 21
0
200 IF NS(X,X)<>"N" THEN 180
210 TRAP 310:OPEN #P,8,0,"P":?"#P:"E
S"
220 CLOSE #2:GOSUB 350:?"Enter 'END'
to quit."?"IF LEN(FB$) THEN ?"Enter
SORI FILE" to print all files."
230:?"4Enter a diskname for next disk
label."?"INPUT NS:IF NS="END" THEN GR
APHICS 0:END
240 IF NS="SORT FILE" THEN POKE 205,12
:POKE 204,12:GB=USR(1568,ADR(FB$),LEN(
FB$)/12):GOTO 360
250 OPEN #2,6,0,"D:*.":FS=""
260 INPUT #2,B$:IF LEN(B$)<17 THEN GOT
0 330
270 F$(LEN(F$)+X)=B$(3,10):F$(LEN(F$)+
X)="":F$(LEN(F$)+X)=B$(11):FB$(LEN(FB
$)+1)=F$(LEN(F$)+15,LEN(F$)-4):GOTO 26
0
280 GOSUB 350:POKE 752,X:?"Printing.
.":NS:L=X:CP=0:FOR I=X TO LEN(F$) STE
P 16
290:?"#P;F$(I,I+15):"?"CP=CP+X:I
CP=COL THEN ?#P:CP=0:L=L+X:IF COL>1
THEN IF L=10 THEN L=0:?"#P:?"#P
300 NEXT I:FOR I=L TO 11:?"#P:NEXT I:G
OTO 220
310 TRAP 40000:IF PEEK(195)=138 THEN 1
10
320:?"? "ERROR":PEEK(195):" AT LINE
":PEEK(186)+256*PEEK(187):STOP
330 IF SORT THEN POKE 205,16:POKE 204,
16:GB=USR(1568,ADR(F$),LEN(F$)/16)
340 FOR I=X TO (18*COL-(21+LEN(NS)))/2
:?"#7:"?"NEXT I:?"#P;NS:" HAS ":B$G
OTO 280
350 GRAPHICS 0:?"DISK LISTING PRO
GRAM":?"FOR I=0 TO 15 STEP 0.5:SOUND
0,20,10,15-I:NEXT I:RETURN
360 GOSUB 350:?"Ready to print total
directory?"?"1.insure that printer is
loaded with paper, NOT LABELS"
370:?"4Enter '1' for tiny print."?"
2' for small print."?"4
3' for normal print."
380:?"4Enter '4' for LARGE print."
390:?"4Enter choice when ready":INP
UT NS:IF NS="1" THEN ?#P;"ES"ES":?"#
P:GOTO 440
400 IF NS="2" THEN ?#P;"E"EN":?"#P:
GOTO 440
410 IF NS="3" THEN ?#P;"E"EN":?"#P:G
OTO 440
420 IF NS="4" THEN ?#P;"E"EN":?"#
P:GOTO 440
430 GOTO 360
440 L=X:FOR I=X TO LEN(FB$) STEP 12:?"
#P;L:"":IF L<10 THEN ?#P;"":
445:?"#P;F$(I,I+11):L=L+X:NEXT I:GOSU
B 350
450:?"Enter '1' for another copy":?"
4RETURN to End program":INPUT NS:IF N
S="1" THEN 360
460 GRAPHICS 0:END
470 IF PEEK(1568)<>104 THEN GOSUB 350:
?"One moment please...":FOR I=1568 T
O 1693:READ A:POKE I,A:NEXT I
480 POKE 203,0:POKE 206,0:RETURN
490 DATA 104,104,133,217,104,133,216,1
04,133,209,104,133,208,169,0,133,218,1
33,207,162,1,165,216,133,214,165,217
510 DATA 133,215,24,165,214,133,212,10
1,205,133,214,165,215,133,213,105,0,1
33,215,164,203,165,206,240,10,177,214
520 DATA 209,212,144,44,240,12,176,19
1,77,214,209,212,144,13,240,2,176,30,20
0,196,204,240,227,176,23,144,223,169
530 DATA 1,133,218,164,205,136,177,214
,72,177,212,145,214,104,145,212,192,0,
208,241,232,224,0,208,2,230,207,228
540 DATA 208,208,172,165,209,197,207,2
05,166,165,218,201,0,208,144,96

```



GIVE A BIT!!!

Contribute to the Newsletter this month.

NOVEMBER MEETING HIGHLIGHTS

Reported by
Joseph S. Kennedy

One of the best reasons for being at a JACG meeting was obvious before the beginning of the November meeting. Questions on a wide variety of problems were raised and answers to all were provided by the general membership. Nowhere else are you going to get the wealth of Atari knowledge that you find at one of our meetings.

The meeting was opened with the officers' reports. It was announced that the proposed bylaws would be published in the next newsletter.

President Arthur Leyenberger made the following announcements:

- The JACG Hotline has been established. The number is 201-884-1642. This will give you a recorded message on JACG or Atari news or special announcements (i.e. meeting cancellations due to five feet of snow) as well as allow you to leave a message for Art.

- Ads space is available on the JACG Bulletin Board for \$5.00.

- Questionnaires on JACG were filled out for ANALOG and the National Users' Group Directory.

The video tape produced by the old Atari (pre-JT) on users' groups was shown. Some of your favorite TV stars were in it.

Don Ursem demoed four educational programs:

- Word Spinner from The Learning Company - This 'Game Show' type program has some strange, but, according to my Webster's, valid words in it.

- Monkey Builder from Artworx - here you spell words to help a monkey build a fort and eat bananas.

- Dance Fantasy from Fisher Price - now you can break dance or pirouette right on your own TV screen.

- Linking Logic from Fisher Price - this is a maze game that helps kids to think logically.

Frank Pazel came in straight from Sesame Street with three new programs from CTW/CBS Software:

- Letter-Go-Round is a spelling game with the Sesame Street characters at an amusement park. The program offers good colors and sound and a pleasant reward when the task is completed successfully.

- Big Bird's Fun House is a memory improving game with the characters at an old time fun house.

- Astro Grover is a math game with perhaps the best color graphics to be seen on the Atari or any home computer.

And in a case of total role reversal Art introduced Dick Kushner with Dick's Arcade. To make the presentation of an extremely fast moving game much simpler Dick brought a video tape that he prepared of Gumball by Broderbund. The tape made it much easier to explain the intricacies of the game. Dick also demoed TGIF from Avalon Hill, a game of earning money through a variety of means that can be played with or without the computer as a player.

Ali Chaudry volunteered to be the new program chairman. His phone number is 201-647-6822. Give him a hand in fact:

GIVE A BIT!!

Terminals and the ATR

by James Miller - JACG

The ATR8000 with the Atari as a terminal in CP/M allows you to use great software. Wordstar, dBase II, and Supercalc I find are good mostly because they are in 80 columns. The DT-80 cart is a lot easier to read than Atrmon80 but to go one step better, I'm using a Lear Siegler ADM 3A Video Display Terminal. The book that came with the ATR doesn't say much about using terminals. So the following may be helpful.

Back of the terminal is an RS-232 port.

terminal to Atari I/O 13 pin jack

pin 2 (send)	pin 3 (data in)
pin 3 (receive)	pin 5 (data out)
pin 7 (ground)	pin 4 or 6 (ground)
	pin 1 jumper to pin 10

You must set jumpers J7 and J10 inside the ATR for terminal use. J7 is a double so with J10 that's 3 jumpers to change. Fine if you want to stay in CP/M mode. Radio Shack has a 3 pole switch # 275-661 I use (wire wrapped not soldered!) to these jumpers so I can go back and forth between Atari control and CP/M without opening up the ATR each time to set the jumpers. Also so I don't have to unplug the terminal when I go back to Atari control, I added a 2 pole switch on the jump of Atari jack pin 1 + 10 and between ADM pin 3 to Atari pin 5. Now both Atari and terminal may be left connected at all times to the ATR8000. Some terminals (like Perkin Elmer) look for data set ready signal and need its RS-232 pin 4 jumped to pin 5, and pin 6 jumped to pin 20 before they come to life. Don't forget to set the terminals to 9600 baud, odd parity and 7 bits. Now you have the best of both worlds (CP/M and Atari) all in one system, and clear displays. Now then, where did I put that DOS disk ...



"SHOOT! MY J.A.C.G. MEMBERSHIP RAN OUT!"

FINANCIAL WIZARD One Year Later

by Bill Martin - JACG

The review of Financial Wizard, published in the November JACG newsletter was written some time ago. Since it was written, a new version, 1.5d has been distributed which contains some enhancements to the program. It seemed appropriate to write a follow up in light of the upgrade and I thought that you might be interested in how "FW" performed over a full year of actual use.

In a nutshell, I am as pleased as I was originally with this program. The year end changeover went effortlessly and I experienced no problems with the program through the year. I normally justify my account monthly by reconciling my checks against the numeric listing supplied by my bank on it's monthly statement. If you do the same, LOOK OUT! On two occasions, my account and statement did not agree. Much to their embarrassment, my bank had omitted a check from the numerical listing both times. "FW" told me that there was a \$10.00 error so I entered the check search mode and found all of the checks that were written for that amount. One was outstanding so before I called the payee, I searched through the stack of checks that had been returned and there it was. A perusal of my statement confirmed that the check was reflected under the date listing but not the numerical one. Financial Wizard had done it again.

NEW ENHANCEMENTS

First of all, both single and double density versions are now available. An improved Bargraph program is offered free to double density users while an updated Check entry program that allows multiple checking accounts on separate data disks is being given to single density users. The new programs are "Check Register" which allows you to print out a listing of all your checks on a monthly basis and "Check Ledger". Check Ledger requires an 80 column printer and is of dubious value to me. Briefly, it allows you to get a print-out of checks versus budget and since I still haven't worked out a budget it is currently of no use to me. Future plans may change so I'm not going to "throw it out" quite yet.

Each of these two programs is available from Computari, 10944 North May Ave, Oklahoma City, OK 73120. Price is \$15.00 for either Register or Ledger.

Some of you may have wondered why I get so excited when my bank statement arrives. Well, most of the time I can only work on the computer when my wife is at work or early in the morning. So, if I save the checkbook for the weekend, I have an excuse for working on the computer and can usually stretch out the time to include another project or two. Of course my play will be discovered once she reads this but it's the least I can do for the other JACG members who suffer from the same affliction that I do.

In the year that has gone by since I first purchased Financial Wizard, I can honestly say that the quality of my life has improved. I can't guarantee that it will do the same for you, nor can I guarantee that "FW" will be exactly what you need. I did notice that my hair is still thinning out but at least it's no longer self induced. As one TV character says every Friday night..."It works for me!"

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***  BULLETIN BOARD  ***
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***  24 HOURS/DAY  ***
***                                     ***
***  201-549-7591  ***
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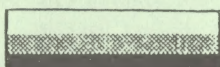
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REPORT CARD

by Richard Lamb - JACG

MATH Mileage
CBS - Software
Atari/ Commodore 64
disk, cassette, cartridge, joystick
\$34.95

This is truly an enjoyable way to learn math concepts. CBS Software or somebody got the idea of turning Pole Position or River Raid into a math challenge and off to the races you go. The game is a one to four player game with 3 levels of difficulty. The object is to steer your formula race car through the countryside choosing the route that will enable you to reach a numeric goal in the shortest and fastest way. Level one starts very simply with +1 and +10 operands. Hence, if you have a goal of 24, you go twice through the +10 forks and 4 times through the +1 forks for a perfect rally and tally. Level two includes multiplication of multipliers 2 through 5 against a +10. Level three includes the same random multipliers (2 through 5) against numbers 2 through 9. In addition to the challenge of levels 1 through 3 there is a night driving option which turns off your continuously displayed tally in the day and tests your ability to keep the score in your head. However, there is a cute option of turning on your lights to display the hidden tally.

I have played the game continuously with my kids and they with each other and we all have found it very entertaining and educational. One seems to be very challenged by a scrolling screen game because you are always moving ahead with no limitation of 3 or 5 lives. There is a clock that displays your elapsed time so you can constantly try to beat your race time as well as choose the least amount of forks to achieve the goal. If you want a higher score drive at night to double it. While I was playing with my kids and driving at night they would babble strange numbers to try and confuse me (sneaky little devils they are).

The sounds and music in the game are excellent. Each time you select a fork you go under the math operand banner and then through a white banner which tears open with a very realistic tearing noise. There are little men along the road waving green, yellow and red flags to indicate your status during the race. All in all the concept behind the game is outstanding because you're constantly on the move, constantly thinking, constantly trying to improve your score, and hopefully constantly learning. My only criticisms are first - when moving into levels 2 and 3 you are faced with not quite learning the math tables, but instead with the reverse math thinking to achieve the goal. Say for instance the goal is 220, with a multiplier of 3 you have to think division first as $220/3 = 70\frac{2}{3} = 20$, hence the optimal route (fewest forks) is $+10+10 = 20*3 = 60+10 = 70*3 = 210+10=220$. This is a quantum jump from level one where you are counting by 10s and 1s. Second - They should perhaps

increase the levels of difficulty to about 10 whereby they could increase the potential field of math operations and also make a more gradual increase in the levels of difficulty. My sons would also like the car to be able to back up (difficult to program perhaps).

However the game is still an outstanding math challenge and game because it keeps the kids going.

J A C G Hotline

(201) 884-1642

The JACG Hotline is a service offered by the Jersey Atari Computer Group to its members and everyone else. The purpose of the Hotline is to disseminate information about the world of Atari computing in an easy to use method and be available to all. The Hotline is available 24 hours per day and can be reached by calling (201) 884-1642. You don't need a modem to call!

When you call the Hotline you will hear a recorded announcement containing information about JACG and Atari computing. The message number and date are mentioned first, followed by Atari news. After the Atari news, information about joining JACG will be given. Messages for any of the JACG officers may be left at the end of the announcement.

A second purpose of the Hotline is to provide information about JACG activities in a timely manner to as many people as possible. For example, if it is snowing or there is a Bell System strike, calling the Hotline will tell you if there is going to be a meeting.

Suggestions for improving the JACG Hotline are always welcome.

(201) 884-1642

J A C G Hotline



TELECOM

By Lawrence Moriano - JACG

A few months ago I started a discussion about CompuServe and the many features it offers the home user. This month I will explore Services For Professions, along with a discussion on the Electronic Mail section.

The Service For Professions category of CompuServe's main function is to help specific professions. The home user will find this section to be quite useful if you are looking to increase your knowledge about a profession you are not accustomed to. This category has seven sections which I will briefly discuss by highlighting its main features.

1. Aviation
2. Communications/Data Processing
3. Engineering/Technical
4. Environmental
5. Legal
6. Medical
7. Jewelers

In the Aviation section you can gather information on aviation weather reports, flight planning, the electronic addition of the official Airline Guide as well as many other exciting features.

The Data Processing section is geared towards the data processing field. There is a listing of job opportunities along with a monthly news letter gathered from data processing companies.

If you are looking for legal advice for your company or personal needs, then the legal section can be important tool for you to utilize.

If are you thinking about buying diamonds or other types of jewelry for investment or personal needs then the jewelry category will come in handy. This section will give the investor an insight to the changing jewelry market along with many other items of interest.

Engineers will find a large database of literature available on science, engineering, and environmental related topics. You can receive information and order documents which are provided by the many suppliers who are a major part of this database.

Doctors of medicine, dentistry and the veterinarian areas can obtain news as well as information pertaining to their own specific needs.

A very important part of any business is the ability to communicate quickly with associates and corporations in your own community as well as across the county. EMAIL can provide this service to anyone who is a subscriber of ComuServe.

With EMAIL you can send messages as well as receive messages from other subscribers. There is a 4000 character, 20 message limit before your files will be filled. An important aspect to consider when using EMAIL is the ability to communicate to business associations all over the country for the price of a local phone call! Pretty sneaky. Old Ma Bell will soon be missing the high monthly long distance phone bills.

I have briefly highlighted the Service For Profession category. Might I emphasize briefly I have barely scratched the surface of this very important part of the CompuServe system. So get on line and see for yourself.

It's hard to believe that the holiday season is right at our door steps. I would like to take this opportunity to wish everyone a happy holiday season. May the upcoming new year be healthy and prosperous to you and all the members of your families.

UNTIL NEXT YEAR
MERRY CHRISTMAS
AND A HAPPY NEW YEAR



A Christmas Letter To JACG

by James Miller - JACG

Christmas really is a great time of year. The kids are making a list and sending it to the North Pole with xmodem. I got down the box of hand painted floppys to hang on the tree (not too close to the lights). Later we'll put on "S.A.M. sings the Chipmunks Christmas album." But for now I'm going to relax, boot the yule tide log, and sit with a book of adventure hints. I see out the window the kids are busy with a snowman. They have an old hat, a carrot, ribbon cable, and two pieces of coal. My guests will arrive soon so let me end this letter with thoughts of peace and joy to all now and in the coming year.

Merry Christmas

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FORTH: WHAT'S NEW?

by Donald Forbes - JACG

FORTH marches on! There is no way to cover all the developments, but here are some of the highlights:

ROY MARTENS

Roy Martens runs Mountain View Press which he advertises as The Forth Source. Any recent issue of BYTE magazine carries their full page ad (PO Box 4656 Mountain View CA 94040, or call 415/961-4103 and charge VISA--and then wait two weeks for the UPS man). Wrote him to find out how much support is available for Atari Forth today. Here are his answers to my questions.

1. Are all the valFORTH packages available and do you sell them? Yes.
2. Is EXTENDED fig-FORTH from Patrick Mullarky available from you now that APX is discontinued? No. Contact him directly (206 Northside Road, Bellevue WA 98004 206/453-9698).
3. What does the PNS (Pink Noise Studios) Atari FORTH include--the one that you market? Editor, assembler, graphics, math, player missile graphics, etc.
4. Is MVP Forth available for the Atari and with what features? Not now--do you want to do one?
5. Is there any public domain FORTH available for the Atari? Don't know.
6. Do you know of any other source of support for Atari FORTH? No.
7. Do you have a home address at which I can reach Chuck Moore for biographical data? Old address is (PO will forward) 614 The Strand, Manhattan Beach CA 90260. Good luck Donald! Roy. (Incidentally, the latest Gemini catalog 201/267-0988 has this entry: FORTH - APX ...\$34.95.)

THE Z8 FORTH COMPUTER

At the last FORTH chapter meeting in New Brunswick, Professor Nick Lordi showed us a four-inch by four-inch board. He pointed to a white eight-pin chip which was piggybacked onto a black 16-pin chip. "This board," he said (pointing to the white chip), "comes up in BASIC." Then he pulled out another four-by-four board with a similar white eight-pin chip. "This board comes up in FORTH." He plugged the board into an aluminum box hooked up to a keyboard and a monitor and OK came up on the screen. He typed in:
: CATS 1000 0 DO CR ." cats" LOOP ;
and the word "cats" kept rolling up the screen.

"This computer has the essentials of FORTH but has very limited input and output facilities." We asked him why he was interested in such a small FORTH computer, particularly since he already has access to FORTH-83 on the IBM PC in his lab at the Rutgers College of Pharmacy where he teaches. "We can use it for process control to monitor an application in real time. This way we don't have to tie up an expensive IBM PC full time around the clock!"

THINKING FORTH

The first book that Leo Brodie wrote ('Starting FORTH') was the popular tutorial (about 60,000 copies in print) that brought FORTH to the attention of thousands of beginners who had never heard of the language. The book actually covered the 79-standard version of polyFORTH marketed by FORTH Inc. so that fig-FORTH users had to make some adaptations.

The second book (\$16) from Leo Brodie is called 'Thinking FORTH.' The back cover says: "Leo Brodie is a writer, programmer, consultant, teacher, and world renowned authority on FORTH. He was a technical writer for FORTH, Inc., and has been an independent consultant (since 1982) for such clients as IBM, NCR, and Lockheed."

The theme of his new book is: Now that you know how to use FORTH, here is the best way to make use of it. Appendix A has a three-page overview for the uninitiated. The book is actually a book on systems analysis, and how to do systems analysis using FORTH

The book contains no applications with corresponding source code; all the source code is interspersed in the text to illustrate each and every message. All the coded examples are consistent with the FORTH-83 standard. At the end he says: "We have not discussed optimization, validation, debugging, documenting, project management, FORTH development tools, assembler definitions, uses and abuses of recursion, developing multiprogrammed applications, or target compilation. But that's another story." (Is he working on a third book?)

Systems analysis, as you know, is the art of solving problems by combining analysis (break the problem into pieces) and synthesis (recombine the new pieces). The first step is to examine the symptoms you are trying remedy, and then arrive at a definition of the problem. In step two you decide on the solution to adopt. In step three you decide WHAT to do. In step four you decide HOW to do it. Then you build your plant or write your program, or whatever, test it, run it live for real, check the output and--if necessary--go back to step one. They say engineers always build two plants--the first one doesn't work!

Brodie's book covers the first six of the nine phases (as he sees them) of the programming cycle. ANALYSIS: 1. Discover the requirements and constraints. 2. Build a conceptual model of the solution. 3. Estimate cost/schedule/performance. ENGINEERING: 4. Preliminary design. 5. Detailed design. 6. Implementation. USAGE: 7. Optimization. 8. Validation and debugging. 9. Maintenance.

The book is a godsend for newcomers to FORTH--his tips will save you the many hours of work you would spend to reinvent the wheel. The book is also for the experts. He interviewed a dozen of them and reproduces their comments.

"One individual who greatly influenced this book is the man who invented FORTH, Charles Moore. In addition to spending several days interviewing him for this book, I've been privileged to watch him at work. He is a master craftsman, moving with speed and deftness, as though he were physically altering the conceptual models inside the machine--building, tinkering, playing...I hope this book captures some of his wisdom. Enjoy!"

THE COMPLETE FORTH

Most of us are used to thinking of FORTH as a California phenomenon. Thus it comes as a surprise to find that FORTH is really international. Alan Winfield, a lecturer in electronic engineering at the University of Hull in England has written a book (\$16) called 'The Complete FORTH.' A complete description of FORTH would take many more than the 130 pages in the book, especially if the additions in the FORTH-83 standard were included. The 'complete' in this case means that he describes all the words in the FORTH-79 vocabulary.

"Most of the existing languages suffer serious limitations," he points out. "BASIC is too slow for many applications; yet assembler is not user-friendly, is difficult to learn, and worse still, is limited to one processor. FORTH overcomes all these difficulties to provide a compact and friendly language, with fast execution."

He has a tear-out FORTH-79 handy reference card in the back. Best of all, the book concludes with the source code for two applications. One is a calendar vocabulary that uses DAY to give you the days of the week, MONTH to print a calendar for any month, YEAR to print a one-year calendar and DAYSLEFT to print the days left until New Year. The other is a bouncing ball game in which you can use the Keyboard Keys Z and / as a bat, or change the code to use the Atari Joystick.

One reviewer who used Winfield's book to teach a FORTH class to beginners said he preferred it to 'Starting FORTH.' In a similar situation--if you ask me--I would agree with him.

FORTH TOOLS

The 1983 standard for FORTH has now been published. It takes away eleven words from the 1979 standard and adds twenty more. You can find the details in the Aug 84 BYTE article by Kevin McCabe FORTH-83: EVOLUTION CONTINUES. There is a public domain version (\$25) for the IBM PC by Henry Laxen and Michael Perry (choice of three formats on two disks: 8080 CP/M-80 or 8086 CP/M-86 on 8" SSD; or 8086 MS-DOS on 5 1/4" DSDD) from No Visible Support Software PO Box 1344, 2000 Center St Berkeley CA 94704.

Now the books are beginning to appear. The first (\$20) seems to be 'FORTH TOOLS Vol 1' by Anita Anderson and Martin Tracy. "We especially want to thank Henry Laxen, Michael Perry, and Kim Harris for their

help with a language implementation model. And finally we would like to thank Charles H. Moore, the father of FORTH, whose foresight we celebrate in this book."

The book is a 200-page tutorial with examples on every page covering all the words in the 1983 standard. Laxen, Harris and Perry have been teaching FORTH for years, mostly through the pages of 'Forth Dimensions.' Here is an opportunity for the beginner to sit down with the experts and progress from the basics (stack manipulation, the editor, variables, constants and arrays) all the way to advanced topics (such as vocabularies, exceptional conditions, CODE words, and bit and byte manipulation).

CALENDAR

You can make a calendar for any year in an 89-year period starting in 1900 (or 1951) with the following public domain code from Jesse Jay Wright that appeared in the Nov 83 issue of Forth Dimensions.

```
SCR #1
: CTABLE <BUILDS 0 DO C,
  LOOP DOES> + C0 ;
  31 30 31 30 31 31
  30 31 30 31 29 31 0
  31 30 31 30 31 31
  30 31 30 31 28 31 0
26 CTABLE DAYS-IN-MONTH
: IS-LEAP-YEAR?
  DUP DUP 400 MOD 0=
  SWAP 100 MOD 0= NOT OR
  SWAP 4 MOD 0= AND;
: 2DUP OVER OVER;
: 2DROP DROP DROP ; -->
SCR #2
: DAY-OF-YEAR
  IS-LEAP-YEAR?
  IF 13 + 14
  ELSE 1 ENDIF
  2DUP = IF 2DROP
  ELSE DO I DAYS-IN-MONTH
  + LOOP ENDIF ;
: DAY-OF-WEEK
  DUP >R DAY-OF-YEAR 0
  R> 1900 ( or 1951) D0
  I IS-LEAP-YEAR?
  IF 366 + ELSE 365 + ENDIF
  LOOP + 7 MOD ; -->
SCR #3
: CALENDAR
  2DUP SWAP . ." - " CR
  ." Sun Mon Tue Wed"
  ." Thu Fri Sat" CR
  2DUP 1 ROT ROT DAY-OF-WEEK
  DUP 2* 2* SPACES
  ROT ROT
  IS-LEAP-YEAR?
  IF 13 + ENDIF DAYS-IN-MONTH
  1+ 1 DO I 4 .R
  1+ DUP 7 = IF CR ENDIF 7 MOD
  LOOP 0= NOT IF CR ENDIF CR ;
: CALENDAR-YEAR 13 1 DO DUP 1
  SWAP CALENDAR LOOP DROP ; ;S
```

Add your own greeting and use it for a New Year's card!

MAGAZINE ARTICLES

Many interesting articles on FORTH appeared in recent issues of BYTE and DR DOBB'S JOURNAL. However....Author Charles

Reade (The Cloister and the Hearth) had a recipe for novel-writing in serial form: "Make 'em laugh; make 'em cry; make 'em wait."...if you keep editor Frank Pazel waiting too long he will not print your copy... So... au revoir!

MIDI and the Atari Musician

by James Miller - JACG

Musical Instrument Digital Interface (MIDI) provides a means to interconnect various synthesizers, keyboards, drum machines, and home computers through a common compatible interface.

MIDI is a hardware and software standard found on Korg, Roland, Moog, Sequential Circuits, Yamaha, etc. Owning the Poly800 and the Atari 800, I called Korg to locate software and was told Apple and Commodore versions were available but nothing for the Atari. Rats! It would be great if I could use the Atari as a controller and keep disk storage of synthesizer programs.

Obtaining the Midi 1.0 specification I learned the connection was asynchronous much like a modem. But the baud rate was too high (31.25 Kbaud) for the 850 RS-232. However a RS-232 Midi interface has just been announced by a southern California company. IMA (The International MIDI Association, also in California) offers a MIDI database containing a research library and in the future will have files of sounds, rhythms, and sequences.

A homemade interface may not be any good for me with the 800 but there may be hope for XL owners as the XL bus connector's potential is yet untapped. The idea of expanding the list of usable Atari peripherals is exciting, and will only make our computers more useful tools.

Beyond Armageddon Adventures in Adventuring

Christmas Edition by Lord Demofire

This month I will take a look at the best adventures of the past, present, and perhaps future. This is basically to give everyone a good idea about which adventures would be best suited for wrapping and putting under the tree.

If you're looking for a good starter adventure at a low price, take a look at Adventureland from Adventure International. This old standard, although not as descriptive and flexible as the Infocom genre, makes a good introduction for novice adventurers, but the more experienced adventurer may find it a bit easy. Ditto for Wizard and the Princess from On-Line. For more extensive adventuring in the same general subject area (i.e., fantasy worlds with dragons and wizards), there is the ever-popular Zork series from Infocom. This series includes the first three Zorks plus the relatively new Enchanter and

Sorcerer, my personal favorites. (Note: Infocom adventures are a step above all others in difficulty; think carefully about the one who will be playing it.)

If you're not into fantasy, you might want to try science fiction. Some of the best in this area include Suspended, Starcross, and Planetfall, all from Infocom. At this time it would seem as if Infocom dominates all others in this area, and indeed it does. Also, there is the area of archeological and mythical quests. Into this area fall such successes as Infidel from Infocom, Ulysses and the Golden Fleece from On-Line, and Mask of the Sun from relatively unknown Ultrasoft. And, of course, there are always detective stories, and Deadline is still the granddaddy of them all here.

Some recent Infocom adventures have not been up to par with previous Infocom standards. Into this category fall The Witness, a detective story that doesn't quite cut it, and Seastalker, ideal for the novice but boring for everyone else. You might want to avoid buying these strictly on Infocom's reputation.

What does the future hold? Well, Synapse is working on something called Alternate Reality, a seven-part graphics adventure with a supposedly Infocom-like parser, and it should be worth a look. Infocom has just come out with The Hitchhiker's Guide to the Galaxy, a three-part series that follows the plot line of the successful novels. Watch it carefully, it may not be everything it's cracked up to be and turn out to be a flop. And, of course, I am eagerly awaiting Conjurer (this is the rumored name), the final chapter in the Enchanter series. Look for it -- if it's everything it's supposed to be, we're all in for a real treat.

Merry Christmas, and Good Adventuring!

P. S. On the Bulletin Board, Scott Brause has just established a hint sub-board independent of the adventure board for you to send your problems directly to me. Use it in good health!

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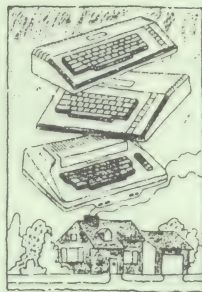


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ABCs of Atari Computers



Book Review by Frank Pazel - JACG

One of the benefits of being an officer of the JACG is receiving the monthly package of newsletters from user groups around the world. We are on a reciprocal mailing list with over seventy groups in the fifty states, Costa Rica, Canada, and Australia. There is such an overwhelming volume of paper to look at you reach the point where you develop a mindset about perusing it. I find a quiet spot during a quiet time. I turn off the phones, put on some dentist office music and get to it.

At the risk of being snobbish, there are some awful newsletters out there. Not because they are barely legible or on faded spirit master copy but because of lack of content. The people who put them out work hard at it, I'm sure, but there is just no substance. And that's what a club newsletter is really all about.

At the same time there are some superb newsletters. There are certain mastheads that I always look for knowing that there will be some really great material inside. I try to sort out the special stuff and run it in our newsletter but space and costs are prohibitive. As the months go by it is frustrating to know that there are such interesting and informative goodies not getting to the masses because of the logistics. It actually causes me pain to file so much of this material away or relegate it to the never-to-be-seen-again place. Someone has finally done something about this problem.

He is Dave Mentley who was president of the Atari Bay Area Computer Users Society (A.B.A.C.U.S.) in San Francisco. I met Dave during August of 1983 when I visited their monthly meeting at Fort Mason. He too, shared my enthusiasm for the incredible amount of valuable information that passed his way. He saved every article and tip that the hackers were discovering and that the original design team probably didn't know was there. And he added no small amount of technical expertise of his own. It has become a book titled ABCs of Atari Computers, published by Datamost. It is available from D.E.M. Associates, P.O. Box 325, El Cerrito, CA 94530 for \$14.95 plus \$1.50 for mailing.

The words from Dave's Foreword best tell what goes on inside. "This book is designed as a guide to take you from being a beginner to being an intermediate user...As a president of a large users' group I was exposed to a constant flow of fascinating discoveries that probably only 1% of Atari owners could know about." Like me, he clipped and filed. Eventually he began organizing things and decided to put everything in alphabetical order. The book starts with two As- A for ACCUMULATOR and A for the directory command in DOS 2.0S. -and ends with Z80.

I find myself thumbing back and forth through the book. Each page is so jammed full of interesting things to learn (or re-learn) and try that I find it hard to go through things starting sequentially from page one. That speaks well for the work. There are so many topics that it is impossible in any review to mention but a few things which were my favorites. Do error codes still bug you? One of the longest entries is ERRORS. Between pages 91 and 96 you are treated to real plain English explanations of sixty-one of the common error codes. For some of us, this is worth the price of admission alone. Do you know what INDIRECTION is or how to determine which version of ROM you have? Is it, maybe, the European PAL version? What is PAL, anyway? Remember seeing it in the APX catalog descriptions?

The answers to these and thousands of other questions we didn't know enough to ask are presented in this 228 page compendium. It was a prodigious task, this book. It fills a need that most of us, oddly enough, didn't know we had. However, once you've looked at any page I bet you won't want to stop.

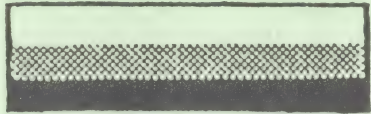
You'll have to excuse me now. I've got to start typing in the Memory Tester program on page 136. It's just long enough to look like it will do fantastic things on the picture tube and short enough so I can type it in about ten minutes. What more could a hacker want? "HACKER" - Slang expression for a person who has given up most of their normal interactions with society to play around with computer hardware or software for fun." - page 108.



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Atari Press Conference 11/13/84

In the first word from Atari since Jack Tramiel took over Atari, some interesting information is finally given. Although no new specific details are revealed on the 16 or 32 bit computers Atari has promised to deliver early next year, some information, only speculated at before, has now come to light.

SUNNYVALE, CA--The new Atari Corp. today dropped the price of the Atari 800XL to "under \$120" from \$179 -- and hinted that some major retailers may drop the price to \$99.

Atari 1050 disk drives will be cut to below \$200 for holiday shopping, and the 1010 data recorder and 1027 printer will also be reduced in price, according to Vice President for Marketing, James Copland.

An Atari 800XL with disk drive, 1027 printer and key software should be available now for under \$600, Copland said. Atari Christmas sales will be supported with a multi-million dollar print advertising campaign with the theme, "Even Scrooge would give one...".

At the January Consumer Electronics Show, Atari will show a line of three to five 8-bit machines compatible with the current 800XL and a new line of 16-bit machines. All products are to be on the market during the first quarter of 1985.

True to their "Rock Bottom Pricing" strategy, Atari will also introduce a new modem and full-sized color printer at CES. In an exclusive interview with ANTIC following his press conference today, Tramiel underlined his commitment to Atari telecommunications and said that the 1985 modems will upload and download at 300 and 1200 baud and connect without any interface box.

Telecommunications was emphasized by Sig Hartman, President Atari Software, who told ANTIC that the Plato cartridge was their number 1 new software product. Hartman had evidently been (unsuccessfully) trying to develop a Plato terminal emulator at Commodore for the C64 since 1983.

Tramiel pledged to start a new program of support to user groups. "When a person buys a computer, he shouldn't be left out in the cold. We'll give him as much support as we can if he needs help," Tramiel said.

The first look at the new 32-bit Atari computers will come in April at a computer show in Hanover, Germany. After the conference, Sam Tramiel privately confirmed that this machine would utilize the new National Semiconductor 32032 and would be a "VAX in a box." Copeland would only say that this new machine would be a "user-friendly reliable computer at rock-bottom prices."

"We give the people what they want. Our work ethic is to constantly strive for improvement," Copeland said, echoing Atari owner Jack Tramiel's philosophy of "computers for the masses, not the classes."

"We always try to reduce the computer's cost to what's affordable for the customer," said Tramiel. "Our goal is to make the best computers at every meaningful price point between \$100 and \$1000."

The new Atari Corp will not charge more than \$49 for software, said Tramiel.

Although he would not outline specifics, Tramiel said all the 8-bit machines will be

compatible, at least one will offer 128K, and at least one will be a portable, luggable computer.

The new 800XL will look almost exactly like the older machine, but will contain improved new design technology, according to company president Sam Tramiel.

The company's line of 16-bit and 32-bit microcomputers will use a proprietary operating system and VLSI custom graphics coprocessors developed by Atari in Sunnyvale, according to Sam Tramiel.

These computers will also feature GEM, the Macintosh-like Graphics Environment Manager produced by Digital Research, according to Sam Tramiel.

GEM is an extension of the operating system and supports overlapping windows, pull-down menus, icons, mice and other advanced user-friendly features.

Meeting with the press en masse for the first time following their purchase of the company, Atari executives were almost astonishingly open about their confidence in the future. Atari Corp. is projecting \$1 billion in sales during 1985, Copeland said.

Copland said Atari expects to sell at least a half million 800XL's within the next five months, using a network of major mass retailers and distributors.

Orders for the 800XL have exhausted Atari's current inventory, and the company is now manufacturing 150,000 new machines monthly at factories in Taiwan and Ireland. Another facility will be operating in Japan soon, according to Sam Tramiel.

At test markets in Detroit and elsewhere, the newly low-priced 800XL sold out almost overnight, with no advertising, said Sam Tramiel.

"Most people six to 26 know how to use computers. We don't have to educate them on how to use computers the way IBM does. I believe American parents wants to educate their children to the greatest possible degree," Jack Tramiel told ANTIC, adding that he intends to offer price incentives for schools to purchase Ataris.

Tramiel's philosophy is very clear. "We sell products to individuals--personal computers. We do not intend to compete in business computers."

However, Tramiel also said he is prepared to knock out anyone who sells computers, including Apple and IBM, if they choose to compete with him.

"After I left Commodore -- due to philosophical differences with the management -- I noticed business was becoming very dull. Everyone was sitting around, being very greedy and trying to get as much money as possible. There was a need for new life and excitement in the computer business," Tramiel said.

"The end-user is intelligent. He knows what he wants," said Tramiel. He said he intends to support his customers by increasing the existing software base, working closely with third-party software developers.

Tramiel said the new machines will be backed by a 90-day warranty, during which time a customer could obtain a new, replacement unit if problems develop with the computer. After that, customers could take their machines to any one of some 1,500 service centers around the country or mail it to Atari for service.

"We like to convert proven products into personal use--for the lowest price," said Tramiel. His company, although it continues to design its own chips, will not conduct leading-edge research.

The next step for Tramiel, after his current plans, is to "turn around mainframe technology for a hand-held computer."

Executives hope to take Atari public in 1985, after raising \$150 million through three \$50 million private and stock-market placements.

"In 1987, there will be 50 million personal computers sold worldwide, and over half of those will be below \$200," Tramiel predicted.

"Back when I was in the calculator business I correctly predicted that the price would drop to \$9.95 (from over \$1,000) within 10 years.

Tramiel also said he would decide in January if Atari will continue producing and marketing the company's 2600 game machine.

This information received via CompuServe's SIG*ATARI.

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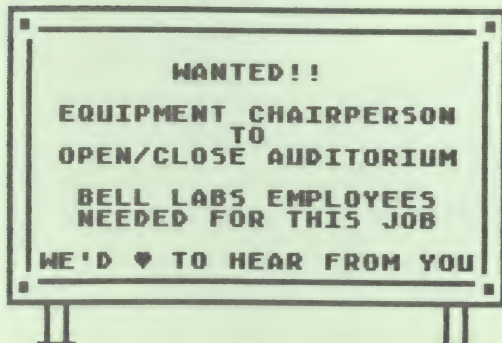
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HAVE YOU RENEWED
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COMPUTER ANIMATION PRIMER

by David Fox & Mitchell Waite

Review by Donald Forbes - JACG

WAIT!!...WAIT!!...You are off to the Salvation Army to donate your old Atari 800 and take a charitable tax deduction? Turn off the IGNITION for just a minute and listen!...Don't be too hasty!...You bought another computer?...But there is still life in the Atari!!!

Chris Crawford knows more about the Atari than anyone. Look here on page 105 of his new book 'Art of Computer Game Design' where he discussed the future of computer games: "Consider two extreme hypothetical futures. The first has no technological development and the second no artistic development. In the first world I am stuck with an Atari 800 as my sole medium for game design. This does not worry me too much; I could explore the possibilities of this machine for five or ten years before beginning to feel trapped..."

Now you can turn your Atari into a fabulous animation graphics machine and start all over again. It's all here in this new book that just hit the bookstores, called 'Computer Animation Primer' by David Fox (the same fellow from 'Rescue on Fractalus!' that Dick Kushner wrote about in the last newsletter) and Mitchell Waite, who bought his first Apple from Steve Jobs in 1976 and then went on to write 'BASIC Programming Primer.'

The book was written two years ago. You must have read about it in the Atari Connection Fall 1982 issue (remember...?...where they said it was scheduled for release soon...?) You recall how they told that it all started when a 10-year-old boy ran across some discarded old Flintstones drawings out behind the Hanna-Barbera Studios in Los Angeles and how today David Fox is a best-selling author of computer books. "When I was around 10 years old, I lived in Los Angeles, not too far from the Hanna-Barbera Studios. Whenever they finished production of something like the FLINTSTONES, they would throw all their old cell drawings away. We kids used to go to the trash bins and grab all their old discarded cells. Lots of times you could get a sequence in order, with the frame numbers marked on the drawings. Then you could go over them and see exactly how it worked."

The Atari Connection illustrations showed "The Great Movie Cartoon" of a street scene with a little man and a truck with houses, trees and clouds scrolling in the background captioned "computer-generated pictures from the Computer Animation Primer. What used to take months for an army of artists now takes but a few hours for one person with an Atari Home Computer." Remember?

Remember the 11-page article in the November 1982 Byte: Computer Animation with Color Registers--The color registers on the Atari 400 and 800 give programmers amazing animation capabilities, even in BASIC? Where

they said: Unbeknownst to many people, the Atari 400/800 contains color-mapping hardware (called color registers), and this feature alone gives it awesome capabilities when compared to its competitors? And where they had the BASIC program for the autumnal waterfall scene on page 210 where they produced the effect of moving water by cycling different shades of blue through the color registers? The one that I typed up and showed to the wife and kids over the Xmas holidays? The article that had the airplane with red and green lights blinking at the wingtips headed toward you in a lightning storm? The one I translated into Forth and used in my article for Analog magazine?

Why was the book two years late? I don't know. The McGraw-Hill catalog continued to carry the book and each time I went into the McGraw-Hill technical bookstore in midtown Manhattan I would ask the clerk about it until at last he said: "I don't think you will ever see it." They could have sold a million copies if it had been in the stores when Atari was number one. Then after last summer's vacation I walked into the World Trade Center bookstore and there it was!!! Three copies. I bought one, and tipped off two friends at work. A steal at \$23 for an expensively produced 500 page paperback with 16 pages of superb color illustrations and six "flip book" computer animation sequences in the margins (which require a perfectly bound book).

The first 150 pages are all about the state of the art in computer animation on newest and most sophisticated computers. The rest of the book is all Atari, and Atari BASIC at that (with a few 'black box' assembler language routines for speed). They thank Chris Crawford for "first turning us on to the animation power of Atari home computers."

The back of the book has 65 pages of listings of examples programmed in Atari BASIC. If you hate to type or don't have the time but do have \$20 you can send away for a two-sided diskette. "Any of the programs or routines can be incorporated into your own programs which can then be marketed. Only an acknowledgment at the beginning of the program and in the documentation is required."

The use of character set graphics in animation takes up chapter 5. Use the built-in character set for simple animation, such as birds flapping their wings. Create a man who gingerly walks across the computer screen. Character set flipping shows how to make 36 horses gallop across the screen at once. With a multicolored character set and a redefined display list you can produce an arcade-like explosion on the screen complete with sound effects.

Atari's color map takes up chapter 6--a high-tech feature which allows you to change the color on the screen almost instantly with one instruction and without redrawing the image. A Star Wars trench shows motion using color registers. Plus a display of a cascading waterfall in a peaceful valley.

Player-missile graphics, an Atari exclusive, are used in chapter 7 to move objects on the screen without erasing the background. Example: a bouncing ball which flattens as it strikes the floor.

The six machine language routines for the BASIC programs are introduced in chapter 8, to fill memory with a selected byte value, to move players to any point on the screen, to move frame information into the players at a selected rate, and to assign a horizontal velocity to the players. (David Fox on page 331 cites JAWBREAKERS as an example of a commercial game that uses vertical blank interrupt and player-missile graphics. Chris Crawford in his book remarks: "This game, now removed from the market, was structurally indistinguishable from PAC-MAN. This game provides a good example of the methods that can be used to copy games while attempting to minimize legal problems.")

Everything comes together in the last chapter with a demonstration program that scrolls an entire suburban background across the screen at various speeds. A little man walks down the street, head bobbing and arms swinging. Trees and houses with lawns and fences scroll by in the background. In the foreground, cars and trucks pass by with roaring engines. "The result will give you an interactive experience where you become the dominant player in a world of graphics figures and flashing colors."

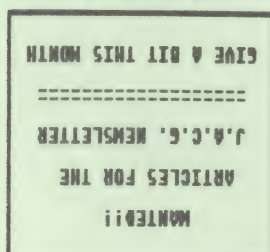
Why are you turning on the IGNITION???...Come back!!!!...You will be SORRY!...Don't say I didn't WARN YOU!!!!...

Writing For The JACB Newsletter

Articles should be submitted to the Editor by the 20th of the month for inclusion in the next issue. Submissions preferred on disk, using LJK Letter Perfect or Atari Writer. Font style should be Elite or Proportional with right hand justification. If hard copy is submitted the final printed width should be 4-1/4 inches from left margin to right margin. All formats will be considered including hand written documents if first arranged with the Editor.

We want to encourage everyone to voice his/her thoughts, knowledge, and opinions. Writing will be modified at the discretion of the Editor. No piece will be knowingly altered out of original intent.

Intentional



PROGRAM SHARING

by Don MacLeay - JACB

I would like to explain my feelings to the Atari community at large about program sharing. Program sharing is copying and giving to other users programs you've bought, and receiving copies from others. The publishers call it "piracy" which I reserve for those who try to commercially distribute a program without the author's permission.

First, the benefits. Not surprisingly I now have a large collection of software that has arrived in time to save me from the realization that it will be years before I can write a useful program myself. Most are games. About half the programs that I did pay for I've regretted because they are sold with hype and little factual explanation. I've made many friends to share the excitement that comes from booting a program the first time.

I see no reason to defend program sharing as simple observation would show that those who copy the most also end up buying the most new software as they stay involved with the machine and gain a taste for better programming. To get a new release for "free" means waiting for six months by which time it could be outdated and without documentation. Gamewise it takes frequent new programs to keep up a user's interest.

The best software protection a publisher can have is good documentation. A good example is Sublogic's Flight Simulator II. Enclosed with two disks are flight maps, two books, and a quick reference card. These "software peripherals" provide additional information that treble the value of the program alone.

I now classify programs as one, two, or three stars. One star programs are nice to have but would never buy. Few are commercial works but those of amateur programmers. Two star programs are playable, fun and worth a second play but not worth the prices charged for the time entertained. Three star programs have great value in entertainment and education with documentation to match. They are worth paying the prices now being charged.

There can be no war between software publishers and users. We will both lose. To cooperate with them you must simply continue to buy software. The best programs with the documentation you want, buy. Don't buy the second rate programs, or if you're tired of guessing at what's best, go dutch with a friend. Programs with copy protection that can't be easily broken will be forgotten.

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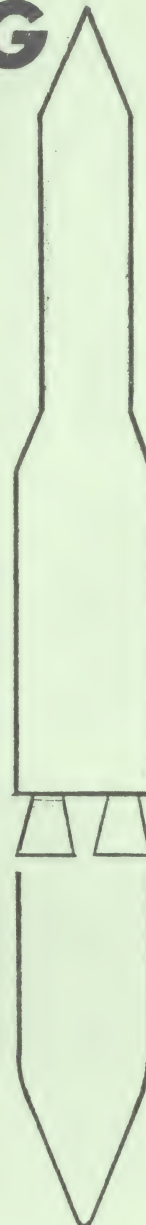
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INFINITE PRECISION DIVISION

by Kenneth J. Pietrucha - JACG

From an early age we are taught that quality is preferred over quantity. If you take a trip to New York you will see people staring at the largest building, while a trip to the zoo shows that the elephant is preferred over the pygmy monkey. In some cases therefore, big is better. The field of Recreational Mathematics with its large numbers holds such a fascination for me.

The Atari unfortunately, like all personal computers, can only print out a limited number of digits. If the answer is a whole number with more than 10 digits it goes to scientific notation. If the answer is a decimal it ends or truncates at the tenth digit, just like a scientific calculator.

The following program was written to study the repeating number sequence in proper fractions to as many places as desired. No attempt has been made to conserve memory. It is a simple brute force approach. As given, the program will run to 500 decimal places. The limiting factor is the size of the DIMension statements and the calculator loop in 130.

```
10 REM INFINITE PRECISION DIVISION
20 REM by Kenneth J. Pietrucha
30 REM J.A.C.G.
40 REM September 2, 1984
50 PRINT
60 REM USE WITH PROPER FRACTIONS ONLY
70 PRINT
80 PRINT CHR$(125)
100 DIM A(500),N(500),T(500),R(500)
110 PRINT "INPUT NUMERATOR":INPUT A
120 PRINT "INPUT DENOMINATOR":INPUT B
122 PRINT CHR$(125)
125 PRINT A;" / ";B;" = ";". ";
130 FOR I=1 TO 500
140 R(I)=A
150 N(I)=R(I)*10
160 A(I)=INT(N(I)/B)
170 PRINT A(I);
180 T(I)=A(I)*B
190 A=N(I)-T(I)
200 NEXT I
```

The program is simple and actually goes through the same steps that you would go through if you were solving the problem by hand using long division. To see what I mean, let's take the fraction 7/22. After entering the numbers we begin at line 125 by printing the decimal point. We assign R(1) the value of 7 at line 140 and in line 150 we multiply by 10, which is the same as adding a zero after the 7. If you are doing this with a pencil, you now have 22 which you are dividing into 70. The integer part of the answer obtained by using a calculator is 3, which is exactly what we get in line 160. Line 170 prints the 3. Now if you follow me we take 3 and multiply it by 22 in line 180. This gives 66. By hand we then write 66 below 70 and then subtract the two getting a difference of 4 which we assign to the variable A in line 190. The loop continues back at line 140 and we go through the same steps again and again.

Actually, unless you are showing off your computer, you probably will never need 500 decimal places. It is a well known fact that fractions formed from whole numbers have decimal blocks that repeat or end in all zeros. Sometimes there is a starting block before the repeating block. Our example has a starting block of 3 while the repeating block is 18. If we know the repeating block, we then know the rest of the numbers in the decimal into infinity. The fraction $7/22 = .31818...$

If we divide 3 by 28, we get a starting block of .107 and a repeating block of 142857. These simple examples were used to prove a point. If you play long enough, you will see some interesting number patterns. Try the fraction 1/49. It has a repeating block consisting of 42 digits.

One last thing. If you want to print the results on a printer, POKE 838,166: POKE 839,238 to send the run to the printer. You may have to wait until the printer buffer fills before it starts printing. Do a POKE 838,163:POKE 839,246 to send the run back to the screen.

TRADING POST

Trading Post is a service for JACG members who wish to sell or swap items of any type. There is no charge for this service. Material must reach the Editor by the 20th of the month to be considered for inclusion in the following month's Trading Post. No commercial services or items will be accepted.

>>>>>>>><<<<<<<<

WANTED: Authors/writers to help develop interactive book concept. For details call Niles at (201) 992-6115 after 6 p.m.

FOR SALE: Atari 1027 printer. Ten months old - like new. \$150 firm. Call Wayne or Chris at (201) 745-4420 days or 756-4964 evenings and weekends.

FOR SALE: "6502 Assembly Language Programming" by Lane A. Leventhal. \$10.00. Text Wizard by Datasoft. \$20.00. Atari Macro Assembler and Program-Text Editor Disk. \$30.00. Contact Mike Mazepa at (201) 356-6437.

WANTED: Atari 810 disk drive in good shape. Call Frank Pazel at (201) 627-8845.

GIVE A BIT!!!

Contribute to the Newsletter this month.



ATARI ART MANIPULATION FOR ALMOST FREE

by Joseph S. Kennedy - JACG

At the last meeting a question was raised about dumping touch tablet art to a printer. This will attempt to answer that question as well as delve into graphics manipulation software available at no cost (that's right - no cost - as in FREE!!).

First, a description of the software:

-Paint a public domain clone of Micropainter written in machine language by Greg Tavares and available on the Atari SIG on Compuserve. This seems to have all the the features of Micropainter and most importantly, for our purposes, the graphics are saved in the same format to disk files.

-Picute a utility for moving Micropainter format art about the screen; adding borders to it; or adding text in a variety of sizes to it. This program was written by William Hough and is available in the August 1983 issue of Antic magazine.

-Paint.Prt this is the screen dump program by Jerry White and Fernando Herrera in the January 1984 issue of Antic. This program allows you to dump a Micropainter type file to an Epson compatible printer and converts the four colors to black, white and two shades of grey.

-Convert this program by Charles Jackson in the September 1984 issue of Antic converts files from one graphics program format to another.

-Chalkboard and Micro Illustrator unfortunately this is not the free portion of my graphics set-up.

To address the problem a brought up at the meeting, Micro Illustrator, whether used with the Atari or Koala or Chalkboard touch tablet, can give two types of disk files. The common one is made with the Storage function. However, you can also save the graphics by pressing the Insert key while your graphics are on the screen. Graphics saved by using the Insert key are saved under the title PICTURE. (To reload to Micro Illustrator a picture saved this way you need to press the Clear key after you have cleared the menu from the screen.) For use with the manipulation software the name PICTURE can be changed using DOS option E to whatever is convenient.

Now this file is converted with the Convert program (catchy title for this program, isn't it?) to the Micropainter format since, as it is, it will not load into the other programs as it does not have the four color bytes required by Micropainter. The converted file is given default colors of red, green, blue and black. To return to the correct colors simply go into the Paint program and correct them. I enter Paint at this time to also make any small corrections or touch-ups that seem to be easier to do in Paint.

At this point you can go directly to Paint.Prt and print your masterpiece or if you desire you can go to Picute to move the picture or add text or borders to it. The illustration shows the effect of added borders and text.



If you would like to use your artwork in a BASIC program as perhaps a title page, a reward in an educational program, or what ever, the following BASIC program taken from the documentation for the Paint program on the Atari SIG will work with all Micropainter type files (another reason for use of the Convert program):

```
* Graphics 8 no window. (Change
24 to a 8 if you want the window.)
10 GR.24
* Find Display list
20 S=PEEK(560)+256*PEEK(561)
* Change Graphics mode to the same
one paint uses.
30 FOR I=1 TO 210
40 IF PEEK(S+I)=15 THEN POKE S+I,14
50 IF PEEK(S+I)=79 THEN POKE S+I,78
60 NEXT I
* Open the picture file for reading
70 OPEN #1,4,0,"D:NAME.PIC"
* Tell the operating system you want
to read.
80 IOCB=848:POKE IOCB+2,7
* Tell it you want it to store the
information in the screen memory.
90 POKE IOCB+4,PEEK(88):POKE IOCB+5,
PEEK(89)
* And you want it to store 7680
bytes there (8 + 256 * 30 = 7680)
100 POKE IOCB+8,0:POKE IOCB+9,30
* Make it do it.
110 USER=USR(ADR("hhh*LVD"),16)
The characters between the quotes
are small h, small h, small h,
inverse asterisk, capital L,
capital U, inverse small d
* Read colors and store them in
their proper places.
120 GET #1,X:POKE 712,X
130 GET #1,X:POKE 708,X
140 GET #1,X:POKE 709,X
150 GET #1,X:POKE 710,X
160 CLOSE #1
200 GOTO 200
```

For those looking for more things to do with their artwork the September 1984 issue of ANTIC also has a slide show program and a program to put up to 128 different colors in your pictures. Have fun with your art (gee, seems like there might be a title for a software package in there somewhere) and remember:

GIVE A BIT!!

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What Language Does Your Atari Speak?:
A Guide to Programming Languages
Available for the Atari Computer
By Arthur Leyenberger - JACG

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Welcome back to this, the last article in the series of articles concerning programming languages. I hope you have enjoyed the previous months discussions of Machine Language, Assembler, Disk Operating Systems, Basic, PASCAL and C. More importantly, I hope you have learned something. This month I'll talk about LISP, FORTH, Pilot, LOGO and Action.

LISP (LIST Processing Language)

LISP is the language used in artificial intelligence research, and has since been implemented on many computers, including the Atari. There are two kinds of words in Lisp, atoms and lists. Atoms are the basic entities of LISP. Any combination of alphabetic characters with any of the ten digits is an atom, as long as it starts with a letter. A list is the second type of word in LISP, and it is built up from atoms and other lists. A list consists of a left parenthesis followed by any number of atoms and lists, terminated with a right parenthesis. The language has functions, variables, and arithmetic operators, but it looks strange to Basic programmers because all the arithmetic operations are in Reverse Polish Notation (RPN).

We are all familiar with Algebraic Notation since this is how we initially learned to add, subtract, divide and multiply. To multiply two numbers, say 5 and 7, we would write, "5*7". In Reverse Polish Notation, the operator comes after the numbers. Therefore, we would write, "5 7 *". It is called "Polish" Notation because of the Polish mathematician, Lukasiewicz. It is called "Reverse" because, unlike Lukasiewicz's original logic, the operator comes last, not first.

A LISP sentence looks like a list, but it carries meaning and it is actually an elementary program. All LISP functions can be applied to arguments. The LISP language has many built-in functions, and the programmer can create his or her own functions. There is only one currently available version of LISP for the Atari computer. It is available from Datamost.

FORTH

Forth is not an easy language to learn since it is different from anything we are used to. In addition, it does its calculations in Reverse Polish Notation (RPN). It is sometimes called the unfinished language because the programmer has almost unlimited freedom to create new words or functions. Everything in Forth is a word. It is not very good as a number

cruncher, but it can link to subroutines in other languages for the more complex math. The programmer defines new words by using old ones. Very little original work is needed to write a new program because the system uses all of the work that was done before, as if it was part of the language.

It is a structured language with no GOTOS or labels for statements. Since the program is later compiled into machine-readable code, very little space is needed in memory. A full Forth can fit into a 16K machine and still have room for programs. In addition, it is inexpensive. The Forth Interest Group (FIG) has made versions available for almost every computer including the Atari.

FIG-Forth is available from the Atari Program Exchange (APX-20029) and Val-Forth is available from Valpar International. Val-Forth uses separate modules that contain Atari-specific features such as Player-Missile graphics, Display-List Interrupts and sound capability. These modules are inexpensive and may be purchased separately, as you need them.

PILOT (Programmed Inquiry Learning Or Teaching)

PILOT was the first computer language dedicated to computer-aided instruction, and has been implemented on many computers. This interactive language allows a peer response and give advice or comment based upon that response. PILOT instructions are divided into four categories:

- 1) Single-letter core instructions which are standard for all of the versions of PILOT. Thus, the programs are portable from machine till appear on the screen.

- 2) Instructions that set various kinds of parameters related to the computer such as output ports, display speed, or memory location.

- 3) File system instructions relating to storing and retrieving programs and data on tape or disk.

The Atari Version of PILOT includes Turtle Graphics (see below). PILOT is probably the easiest language to learn for the new computer user.

LOGO

The LOGO language is easy to use yet sophisticated enough for higher instruction. LOGO uses basic modes called sprites and turtles. The sprites are forms that the user creates that can move around the screen at any speed the user selects. The turtle is a figure that the user can interact with, moving it over the screen, coloring it, and making it draw or erase lines. Instructions to the turtle can be either absolute or relative. For example, from the initial position, GO 10 (relative) and GOTO /, 10 (absolute) are equivalent commands. It is especially easy for children to learn the relative commands

since the child can mimic the responses of the turtle by acting out the commands themselves.

More complex functions (programs) can be created that children can interact with through simple keyboard responses. Children may learn color, direction, letters, words, and sounds through this medium and usually find it fun. It also introduces them to the use of the computer.

Atari LOGO is a good implementation which, among other useful features, contains the capability for manipulating and programming four turtles.

ACTION

Action is a new language from Optimized Systems Software (OSS). It is somewhat of a cross between Assembler and C. However, it's similarity to Basic will allow experienced Basic programmers to convert to this language with few problems. Action is a proprietary product, and is only available from OSS.

The Action system is composed of an editor, the language itself, a compiler and a monitor. The editor is used when the system is first booted up from the cartridge. It allows you to create and modify Action programs. The editor contains two text windows that can be moved throughout the program. In addition to the scrolling window, the editor contains search and replace, delete lines and move blocks of lines features.

The compiler is the heart of the Action language system. After the program has been created, it must be compiled using the Action compiler. This process transforms the relatively english-like Action program into machine language. "Include" statements used with the compiler allow several separate program modules to be combined into one executable file. For example, this would be useful for including previously written general purpose subroutines within a particular program. The include command can be nested up to six levels. This means that an included subroutine can include another subroutine which can include another, etc.

The monitor is the control section of the system. From there you call the editor, the compiler, run a program or exit from the Action language. Access to DOS is also gained through the monitor.

The Action language itself is very structured. Like C, procedures or modules are written separately then grouped together into a program. Expressions may contain arithmetic, bit-wise or relational operators. Many powerful statements are provided such as IF...THEN...ELSEIF...ELSE. Other useful statements include WHILE, UNTIL and DO loops.

The Action language system also contains a library of useful routines. These routines include capability for input, output, I/O support and system functions. The I/O support routines are particularly useful for the Atari programmer because functions such as Open, Close, XIO, Note, Point, Color, Sound, Stick and Paddle are provided.

The programmer experienced to the relatively unstructured world of Basic may have some difficulty adjusting to the very structured Action. However, after a few hours with the language, the light is seen at the end of the tunnel and it all seems natural. Indeed, it may be more difficult going back to Basic after experiencing the speed and power of the Action language.

CONCLUSION

I have covered a lot of ground in this series of articles. Ten different languages have been discussed, some with several dialects. A total of 18 different ways to "talk" to your Atari computer.

Each of these languages have their strengths and weaknesses. Some are better for scientific applications while others are better for the first-time computer user. Other differences such as speed, graphics capability and ease of use are also apparent. Table 2 provides a brief description of the capabilities and application of each of the languages.

As you have seen, there are quite a few languages available

for the Atari computer. This clearly makes the Atari computer competitive with other, more costly machines. In addition to having the greatest game computer available, Atari owners also have a serious tool at their disposal, which can be a workhorse for application programming.

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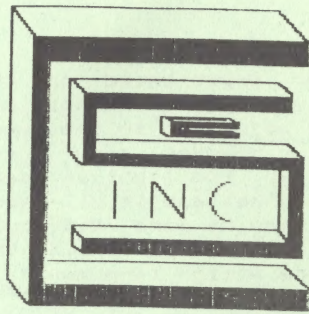
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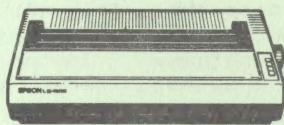
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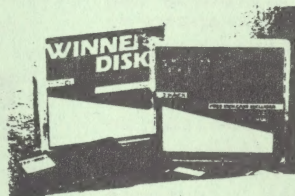
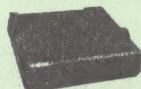
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December 1984

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